IN THE CLAIMS:

1. (Previously Presented) A display apparatus for displaying an image on a display device which includes rows of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction of the pixel rows and emit light of three primary colors respectively, the display apparatus comprising:

5   a frame memory storing color values of an image to be displayed on the display device;

a front image storage unit storing color values of sub-pixels that constitute at least one front image to be displayed on the display device;

a calculation unit acquiring color values of first-target-range sub-pixels that 10 constitute a front image and are composed of a target sub-pixel and one or more adjacent sub-pixels that are adjacent to the target sub-pixel in the lengthwise direction of the pixel rows, and to calculate a dissimilarity level of the target sub-pixel to the one or more adjacent sub-pixels from the acquired color values;

a superimposing unit acquiring the color values from the frame memory as color 15 values of a back image, and generate, from the color values of the front image acquired from the front image storage unit and color values of the back image acquired from the frame memory, color values of sub-pixels constituting a composite image of the front image and the back image;

a filtering unit smoothing out color values of second-target-range sub-pixels of the composite image that correspond to the first-target-range sub-pixels, by assigning weights, 20 which are determined in accordance with the dissimilarity level, to the second-target-range sub-

pixels, and to overwrite the color values stored in the frame memory with color values of the composite image after smoothing out; and

a displaying unit displaying an image based on the color values of the composite image after the smoothing out stored in the frame memory, wherein

25   in the smoothing out by the filtering unit, assignment of a larger weight causes a greater degradation of image, and

when the front image storage unit stores color values of a plurality of front images and when the superimposing unit is to generate color values of another composite image using color values of another front image among the plurality of front images, the superimposing unit

30   uses the color values stored in the frame memory after the overwriting by the filtering unit, as color values of a back image.

2.   (Previously Presented) The display apparatus of Claim 1, wherein

the calculation unit calculates a temporary dissimilarity level for each combination of the first-target-range sub-pixels, from color values of the first-target-range sub-pixels, and regards a largest temporary dissimilarity level among results of the calculation to be

5   the dissimilarity level.

3.   (Original) The display apparatus of Claim 2, wherein

the first-target-range sub-pixels and the second-target-range sub-pixels are identical with each other in number and positions in the display device.

4.   (Original) The display apparatus of Claim 1, wherein

the filtering unit performs the smoothing out of the second-target-range sub-pixels if the dissimilarity level calculated by the calculation unit is greater than a predetermined

threshold value, and does not perform the smoothing out if the calculated dissimilarity level is no

5   greater than the predetermined threshold value.

5.   (Previously Presented) A display apparatus for displaying an image on a display

device which includes rows of pixels, each pixel composed of three sub-pixels that align in a

lengthwise direction of the pixel rows and emit light of three primary colors respectively, the

display apparatus comprising:

5   a frame memory storing color values of an image to be displayed on the display

device;

a front image storage unit storing color values and transparency values of sub-

pixels that constitute at least one front image to be displayed on the display device, where the

transparency values indicate degrees of transparency of sub-pixels of the front image when the

10   front image is superimposed on an image currently displayed on the display device;

a calculation unit acquiring color values and transparency values of first-target-

range sub-pixels that constitute a front image and are composed of a target sub-pixel and one or

more adjacent sub-pixels that are adjacent to the target sub-pixel in the lengthwise direction of

the pixel rows, and to calculate a dissimilarity level of the target sub-pixel to the one or more

15   adjacent sub-pixels from the acquired color values and transparency values;

a superimposing unit acquiring the color values from the frame memory as color

values of a back image, and generate, from color values of the front image acquired from the

front image storage unit and the color values of the back image acquired from the frame

memory, color values of sub-pixels constituting a composite image of the front image and the

20   back image;

a filtering unit smoothing out color values of second-target-range sub-pixels of the composite image that correspond to the first-target-range sub-pixels, by assigning weights, which are determined in accordance with the dissimilarity level, to the second-target- range sub-pixels, and to overwrite the color values stored in the frame memory with color values of the

25   composite image after the smoothing out; and

a displaying unit displaying an image based on the color values of the composite image after the smoothing out stored in the frame memory, wherein

in the smoothing out by the filtering unit, assignment of a larger weight causes a greater degradation of image, and

30   when the front image storage unit stores color values of a plurality of front images and when the superimposing unit is to generate color values of another composite image using color values of another front image among the plurality of front images, the superimposing unit uses the color values stored in the frame memory after the overwriting by the filtering unit, as color values of a back image.

6.   (Original) The display apparatus of Claim 5, wherein

the calculation unit calculates a temporary dissimilarity level for each combination of the first-target-range sub-pixels, from at least one of (i) color values and (ii) transparency values of the first-target-range sub-pixels, and regards a largest temporary

5   dissimilarity level among results of the calculation to be the dissimilarity level.

7.   (Original) The display apparatus of Claim 6, wherein

the first-target-range sub-pixels and the second-target-.range sub-pixels are identical with each other in number and positions in the display device.

8.   (Original) The display apparatus of Claim 5, wherein

the filtering unit performs the smoothing out of the second-target-range sub-pixels

if the dissimilarity level calculated by the calculation unit is greater than a predetermined

threshold value, and does not perform the smoothing out if the calculated dissimilarity level is no

5   greater than the predetermined threshold value.

9.   (Previously Presented) A display method for use in a display apparatus for

displaying an image on a display device, the display apparatus including a frame memory storing

color values of an image to be displayed on the display device, the display device including rows

of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction of the pixel

5   rows and emit light of three primary colors respectively, the display method comprising:

a front image acquiring step for acquiring color values of first-target-range sub-

pixels composed of a target sub-pixel and one or more sub-pixels that are adjacent to the target

sub-pixel in the lengthwise direction of the pixel rows, the first-target-range sub-pixels are

included in sub-pixels that constitute a front image to be displayed on the display device;

10   a calculation step for calculating a dissimilarity level of the target sub-pixel to the

one or more sub-pixels, from the color values of the first-target-range sub-pixels acquired in the

front image acquiring step;

a superimposing step for acquiring the color values from the frame memory as

color values of a back image, and generating, from the color values of the front image acquired

15   in the front image acquiring step and color values of the back image acquired from the frame

memory, color values of sub-pixels constituting a composite image of the front image and the

back image;

a filtering step for smoothing out color values of second-target-range sub-pixels

of the composite image that correspond to the first-target-range sub-pixels, by assigning weights,

20   which are determined in accordance with the dissimilarity level, to the second-target-range sub-

pixels, and overwriting the color values stored in the frame memory with color values of the

composite image after the smoothing out; and

a displaying step for displaying an image based on the color values of the

composite image after the smoothing out stored in the frame memory, wherein

25   in the smoothing out in the filtering step, assignment of a larger weight causes a

greater degradation of image, and

when color values of another front image are acquired in the front image

acquiring step, the superimposing step generates color values of a composite image using the

acquired color values of said another front image and the color values stored in the frame

30   memory after the overwriting in the filtering step, as color values of a back image.

10.   (Previously Presented) A display method for use in a display apparatus for

displaying an image on a display device, the display apparatus including a frame memory storing

color values of an image to be displayed on the display device, the display device including rows

of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction of the pixel

5   rows and emit light of three primary colors respectively, the display method comprising:

a front image acquiring step for acquiring color values and transparency values of

first-target-range sub-pixels composed of a target sub-pixel and one or more sub-pixels that are

adjacent to the target sub-pixel in the lengthwise direction of the pixel rows, the first-target-range

sub-pixels are included in sub-pixels that constitute a front image to be displayed on the display

10   device, where the transparency values indicate degrees of transparency of sub-pixels of the front

image when the front image is superimposed on an image currently displayed on the display

device;

         a calculation step for calculating a dissimilarity level of the target sub-pixel to the

one or more sub-pixels from the color values and transparency values of the first-target-range

15   sub-pixels acquired in the front image acquiring step;

         a superimposing step for acquiring the color values from the frame memory as

color values of a back image, and generating, from the color values of the front image acquired

in the front image acquiring step and color values of the back image acquired from the frame

memory, color values of sub-pixels constituting a composite image of the front image and the

20   back image;

         a filtering step for smoothing out color values of second-target-range sub-pixels

of the composite image that correspond to the first-target-range sub-pixels, by assigning weights,

which are determined in accordance with the dissimilarity level, to the second-target- range sub-

pixels, and overwriting the color values stored in the frame memory with color values of the

25   composite image after the smoothing out; and

         a displaying step for displaying an image based on the color values of the

composite image after the smoothing out stored in the frame memory, wherein

         in the smoothing out in the filtering step, assignment of a larger weight causes a

greater degradation of image, and

30   when color values and transparency values of another front image are acquired in

the front image acquiring step, the superimposing step generates color values of a composite

image using the acquired color values of said another front image and the color values stored in the frame memory after the overwriting in the filtering step, as color values of a back image.

11.   (Previously Presented) A computer-readable recording medium storing a display program for displaying an image, of which color values are stored in a frame memory, on a display device which includes rows of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction of the pixel rows and emit light of three primary colors respectively, the

5   display program causing a computer to execute:

a front image acquiring step for acquiring color values of first-target- range sub-pixels composed of a target sub-pixel and one or more sub-pixels that are adjacent to the target sub-pixel in the lengthwise direction of the pixel rows, the first-target-range sub-pixels are included in sub-pixels that constitute a front image to be displayed on the display device;

10   a calculation step for calculating a dissimilarity level of the target sub-pixel to the one or more sub-pixels, from the color values of the first-target-range sub-pixels acquired in the front image acquiring step;

a superimposing step for acquiring the color values from the frame memory as color values of a back image, and generating, from the color values of the front image acquired

15   in the front image acquiring step and color values of the back image acquired from the frame memory, color values of sub-pixels constituting a composite image of the front image and the back image;

a filtering step for smoothing out color values of second-target-range sub-pixels of the composite image that correspond to the first-target-range sub-pixels, by assigning weights,

20   which are determined in accordance with the dissimilarity level, to the second-target- range sub-

pixels and overwriting the color values stored in the frame memory with color values of the composite image after the smoothing out; and

a displaying step for displaying an image based on the color values of the composite image after the smoothing out stored in the frame memory, wherein

25   in the smoothing out in the filtering step, assignment of a larger weight causes a greater degradation of image, and

when color values of another front image are acquired in the front image acquiring step, the superimposing step generates color values of a composite image using the acquired color values of said another front image and the color values stored in the frame

30   memory after the overwriting in the filtering step, as color values of a back image.

12.   (Previously Presented) A computer-readable recording medium storing a display program for displaying an image, of which color values are stored in a frame memory, on a display device which includes rows of pixels, each pixel composed of three sub-pixels that align in a lengthwise direction of the pixel rows and emit light of three primary colors respectively, the

5   display program causing a computer to execute:

a front image acquiring step for acquiring color values and transparency values of first-target-range sub-pixels composed of a target sub-pixel and one or more sub-pixels that are adjacent to the target sub-pixel in the lengthwise direction of the pixel rows, the first-target-range sub-pixels are included in sub-pixels that constitute a front image to be displayed on the display

10   device, where the transparency values indicate degrees of transparency of sub-pixels of the front image when the front image is superimposed on an image currently displayed on the display device;

a calculation step for calculating a dissimilarity level of the target sub-pixel to the

one or more sub-pixels from color values and transparency values of the first-target-range sub-

15   pixels acquired in the front image acquiring step;

a superimposing step for acquiring the color values from the frame memory as

color values of a back image, and generating, from the color values of the front image acquired

in the front image acquiring step and color values of the back image acquired from the frame

memory, color values of sub-pixels constituting a composite image of the front image and the

20   back image;

a filtering step for smoothing out color values of second-target-range sub-pixels

of the composite image that correspond to the first-target-range sub-pixels, by assigning weights,

which are determined in accordance with the dissimilarity level, to the second-target- range sub-

pixels and overwriting the color values stored in the frame memory with color values of the

25   composite image after the smoothing out; and

a displaying step for displaying an image based on the color values of the

composite image after the smoothing out stored in the frame memory, wherein

in the smoothing out in the filtering step, assignment of a larger weight causes a

greater degradation of image, and

30   when color values and transparency values of another front image are acquired in

the front image acquiring step, the superimposing step generates color values of a composite

image using the acquired color values of said another front image and the color values stored in

the frame memory after the overwriting in the filtering step, as color values of a back image.

13 - 14.   (Canceled)

15. (Previously Presented) The display apparatus of Claim 1, wherein

the front image of which color values are stored in the front image storage unit

has a resolution that is, in the lengthwise direction, three times a resolution of the display device,

and the front image has color values of three primary colors for each sub-pixel position,

5   the dissimilarity level calculated by the calculation unit is calculated using the

three primary colors for each sub-pixel position,

the superimposing unit acquires, from the frame memory, the color values that are

composed of three primary colors for each pixel position, triples the acquired color values in the

lengthwise direction such that three sub-pixel positions constituting each pixel have same color

10   value for three primary colors as color values for three primary colors of a corresponding pixel,

and uses the tripled color values to generate the color values of the composite image, and

the filtering unit, after the smoothing out, converts the color values having three

primary colors for each sub-pixel position to color values having three primary colors for each

pixel position, and overwrites the color values stored in the frame memory with the color values

15   after the conversion.

16. (Previously Presented) The display apparatus of Claim 5, wherein

the front image of which color values are stored in the front image storage unit

has a resolution that is, in the lengthwise direction, three times a resolution of the display device,

and the front image has color values of three primary colors for each sub-pixel position,

5   the dissimilarity level calculated by the calculation unit is calculated using the

transparency values and the three primary colors for each sub-pixel position,

the superimposing unit acquires, from the frame memory, the color values that are

composed of three primary colors for each pixel position, triples the acquired color values in the

lengthwise direction such that three sub-pixel positions constituting each pixel have a same color

10   value for three primary colors respectively, and uses the tripled color values to generate the color

values of the composite image, and

the filtering unit, after the smoothing out, converts the color values having three

primary colors for each sub-pixel position to color values having three primary colors for each

pixel position, and overwrites the color values stored in the frame memory with the color values

15   after the conversion.

17.   (Previously Presented) The display method of Claim 9, wherein

the front image of which color values are acquired in the front image acquiring

step has a resolution that is, in the lengthwise direction, three times a resolution of the display

device, and the front image has color values of three primary colors for each sub-pixel position,

5   the dissimilarity level calculated in the calculation step is calculated using the

three primary colors for each sub-pixel position,

the superimposing step acquires, from the frame memory, the color values that are

composed of three primary colors for each pixel position, triples the acquired color values in the

lengthwise direction such that three sub-pixel positions constituting each pixel have a same color

10   value for three primary colors respectively, and uses the tripled color values to generate the color

values of the composite image, and

the filtering step, after the smoothing out, converts the color values having three

primary colors for each sub-pixel position to color values having three primary colors for each

pixel position, and overwrites the color values stored in the frame memory with the color values

15   after the conversion.

18.   (Previously Presented) The display method of Claim 10, wherein

the front image of which color values are acquired in the front image acquiring

step has a resolution that is, in the lengthwise direction, three times a resolution of the display

device, and the front image has color values of three primary colors for each sub-pixel position,

5   the dissimilarity level calculated in the calculation step is calculated using the

transparency values and the three primary colors for each sub-pixel position,

the superimposing step acquires, from the frame memory, the color values that are

composed of three primary colors for each pixel position, triples the acquired color values in the

lengthwise direction such that three sub-pixel positions constituting each pixel have a same color

10   value for three primary colors respectively, and uses the tripled color values to generate the color

values of the composite image, and

the filtering step, after the smoothing out, converts the color values having three

primary colors for each sub-pixel position to color values having three primary colors for each

pixel position, and overwrites the color values stored in the frame memory with the color values

15   after the conversion.

19.   (Previously Presented) The computer-readable recording medium of Claim 11,

wherein

the front image of which color values are acquired in the front image acquiring

step has a resolution that is, in the lengthwise direction, three times a resolution of the display

5   device, and the front image has color values of three primary colors for each sub-pixel position,

the dissimilarity level calculated in the calculation step is calculated using the three primary colors for each sub-pixel position,

the superimposing step acquires, from the frame memory, the color values that are composed of three primary colors for each pixel position, triples the acquired color values in the lengthwise direction such that three sub-pixel positions constituting each pixel have a same color value for three primary colors respectively, and uses the tripled color values to generate the color values of the composite image, and

the filtering step, after the smoothing out, converts the color values having three primary colors for each pixel position, and overwrites the color values stored in the frame memory with the color values after the conversion.

20. (Previously Presented) The computer-readable recording medium of Claim 12, wherein

the front image of which color values are acquired in the front image acquiring step has a resolution that is, in the lengthwise direction, three times a resolution of the display device, and the front image has color values of three primary colors for each sub-pixel position,

the dissimilarity level calculated in the calculation step is calculated using the transparency values and the three primary colors for each sub-pixel position,

the superimposing step acquires, from the frame memory, the color values that are composed of three primary colors for each pixel position, triples the acquired color values in the lengthwise direction such that three sub-pixel positions constituting each pixel have a same color value for three primary colors respectively, and uses the tripled color values to generate the color values of the composite image, and

the filtering step, after the smoothing out, converts the color values having three

primary colors for each sub-pixel position to color values having three primary colors for each

15   pixel position, and overwrites the color values stored in the frame memory with the color values

after the conversion.